

WHAT IS CLAIMED IS:

1. An endoscope system comprising:

an electronic endoscope including an imaging unit;

a plurality of types of optical adapters that is freely detachably attached to the distal section of the electronic endoscope, and that has a predetermined observational optical system that includes an identification section with which the type of optical adapter can be identified;

a control device that is electrically connected to the electronic endoscope and that includes an optical adapter identifying/verifying means for detecting the identification section so as to verify the type of optical adapter, an image processing means for receiving an imaging signal sent from the imaging unit so as to produce a video signal, and a control means for manipulating a video signal produced by the image processing means, and controlling the electronic endoscope and external equipment; and

a display device that receives the video signal sent from the control device and displays an image represented by the video signal.

2. An endoscope system according to Claim 1, wherein:

the control device further includes at least one of a result-of-verification notifying means for notifying a user

of the result of verification sent from the optical adapter identifying/verifying means, and an adapter information specification block that reads adapter information by selecting the adapter information from among adapter information items, which are registered in advance in association with types of optical adapters, according to the result of verification sent from the optical adapter identifying/verifying means, and specifies the adapter information.

3. An endoscope system according to Claim 1, wherein the identification section is a field mask included in the observational optical system incorporated in the optical adapter.

4. An endoscope system according to Claim 3, wherein the shape of the openings formed in the field mask is varied depending on the type of optical adapter.

5. An endoscope system according to Claim 4, wherein the optical adapter identifying/verifying means includes:

a detection block that detects the number of straight lines defining an image of each of the openings formed in the field mask which is displayed on the display device; and
an adapter type verification block that compares the

number of straight lines detected by the detection block with reference values that are registered in advance so as to verify the type of optical adapter.

6. An endoscope system according to Claim 3, wherein the width of the openings formed in the field mask is varied depending on the type of optical adapter.

7. An endoscope system according to Claim 6, wherein the optical adapter identifying/verifying means includes:

a detection block that selects straight lines close to horizontal lines from among straight lines defining an image of each of the openings of a field mask displayed on the display device, and calculating the length between the straight lines; and

an adapter type verification block for comparing the length calculated by the detection block with reference values, which are registered in advance, so as to verify the type of optical adapter.

8. An endoscope system according to Claim 3, wherein the shape of the projection of the field mask projecting into an opening is varied depending on the type of optical adapter.

9. An endoscope system according to Claim 3, wherein the position of the projection of the field mask projecting into an opening is varied depending on the type of optical adapter.

10. An endoscope system according to Claim 8, wherein the optical adapter identifying/verifying means includes:

a detection block that calculates the correlation coefficients of the image of the projection of the field mask, which projects into an opening, displayed on the display device relative to a plurality of templates associated with the optical adapters and registered in advance; and

an adapter type verification block that samples a template relative to which the highest correlation coefficient is calculated by the detection block so as to verify the type of optical adapter.

11. An endoscope system according to Claim 9, wherein the optical adapter identifying/verifying means includes:

a detection block that calculates the correlation coefficients of the image of the projection of the field mask, which projects into an opening, displayed on the display device relative to a plurality of templates associated with the optical adapters and registered in

advance; and

an adapter type verification block that samples a template relative to which the highest correlation coefficient is calculated by the detection block so as to verify the type of optical adapter.